

REMARKS

I. General

Claims 1-33, 35, and 36 are pending in the application. Claims 1-33, 35 and 36 stand rejected under 35 U.S.C. § 103.

Claim 1 has been amended for the sole purpose of correcting an obvious typographical error. This amendment was not made in response to any art or reference, and should not be construed to narrow the claim. No new matter has been entered by this amendment.

Claim 32 has been amended to correct obvious typographical errors and the antecedent basis for “estimators.” This amendment has not been made in response to any art or reference, or to narrow the claim, but rather to more clearly present the claimed subject matter. Support for this amendment can be found in the originally-filed application, at least, in Figure 6 and the discussion of Figure 6 in the specification. No new matter has been entered by this amendment.

Applicant hereby traverses the outstanding rejections and requests reconsideration and withdrawal in light of the remarks contained herein.

II. Rejections under 35 U.S.C. § 103

Claims 1, 3-5, and 22-31 stand rejected under 35 U.S.C. § 103(a) as being unpatentable over U.S. Patent No. 5,933,421 to Alamouti et al. (“*Alamouti*”) in view of U.S. Patent No. 6,922,445 to Sampath (“*Sampath*”). Claims 2, 7-21, 32-33, and 35-36 stand rejected under 35 U.S.C. § 103(a) as being unpatentable over *Alamouti* in view of U.S. Patent No. 5,956,642 to Larsson et al. (“*Larsson*”) and further in view of *Sampath*. Applicant hereby traverses the rejections of record.

To establish a prima facie case of obviousness, three basic criteria must be met. First, there must be some suggestion or motivation, either in the references themselves or in the knowledge generally available to one of ordinary skill in the art to modify the reference or to combine reference teachings. Second, there must be a reasonable expectation of success.

Finally, the prior art cited must teach or suggest all the claim limitations. M.P.E.P. § 2143. Applicant respectfully asserts that the rejection fails to satisfy these criteria.

A. The Combination of *Alamouti* and *Sampath* Fails To Teach or Suggest All Limitations of Independent Claims 1, 22, 24 and 27

a. Independent Claim 1

Independent claim 1 recites “selecting a set of OFDMA traffic channels ... based on feedback OFDMA channel information collected from the plurality of subscribers ...” The Office Action alleges that column 22, line 55 to column 23, line 22 of *Alamouti* teaches this aspect of claim 1. Office Action pages 2-3. However, *Alamouti* discloses a base station selecting a channel for an individual subscriber based on the individual measurements collected by that individual subscriber. *Alamouti*, col. 24, lines 24-46. As a result, *Alamouti* fails to teach or suggest selecting a set of channels based on feedback channel information collected from the plurality of subscribers, as required by claim 1.

Claim 1 also recites “base stations having logic ... selecting a set of OFDMA traffic channels from a plurality of candidate OFDMA traffic channels, based on OFDMA channel information collected from at least one of the other base stations” The Office Action admits *Alamouti* fails to disclose selecting a set of channels based on information from at least one other base station. Office Action page 3. The Office Action attempts to cure this deficiency by introducing *Sampath*, which the Office Action alleges teaches this element of claim 1. Specifically, the Office Action points to Figures 5 and 9 of *Sampath*.

However, *Sampath* fails to teach base stations having logic for selecting a set of OFDMA traffic channels, based on OFDMA channel information collected from at least one of the other base stations. *Sampath* fails to teach this aspect of claim 1 for at least two reasons. First, *Sampath* teaches a receive unit 90 – not a base station – collecting channel information. *Sampath* clearly delineates between “receive units” 14, 90 and 212, shown in Figures 1, 5 and 9, respectively, and base station 12. *Sampath* describes “receive units” as “mobile or stationary user device[s],” and does not indicate any other use of the term “receive unit.” *Sampath*, column 5, lines 19-20. That is, *Sampath* does not teach or suggest a base

station using information for any purpose that is “collected from at least one other base station.”

Even for the multi-base station configuration shown in Figure 9, *Sampath* teaches “supervising the operation of BTS 204 and 206” using “feedback from receive unit 212.” *Sampath*, column 13, lines 29-33. Applicant notes that Figure 9 of *Sampath* clearly shows receive unit 212 as a handheld, mobile device – not a base station. Thus, even multi-base station configuration does not teach or suggest “information collected from at least one of the other base stations.”

Also, *Sampath* does not teach or suggest selecting a channel based on any feedback or information. Instead, *Sampath* teaches adapting a system itself to respond to the conditions of a channel, rather than selecting a channel. See *Sampath*, column 5, lines 39-47. Specifically, *Sampath* states “Receive unit 90 can send back a channel descriptor ... identifying the action of the channel [T]ransmit unit 50 can use the channel descriptor ... to adapt its transmission to channel 22.” *Sampath*, column 7, lines 37-43.

Applicant notes that adapting a system to existing channel conditions is different than selecting an OFDMA channel. Applicant also notes that, while *Sampath* may teach selecting antennas for transmission, the selection of antennas is not equivalent to selecting an OFDMA channel, as required by the claim. Thus, *Sampath* does not teach or suggest making OFDMA channel selections based on information collected from at least one other base station, as required by claim 1.

Therefore, the proffered combination of *Alamouti* and *Sampath* fails to teach or suggest all limitations of claim 1. Accordingly, Applicant respectfully requests withdrawal of the 35 U.S.C. § 103(a) rejection of claim 1 and asserts that claim 1 is patentable for, at least, the reasons stated above.

b. Independent Claim 22

Independent claim 22 recites “assigning OFDMA traffic channels for an OFDMA network based on ... the OFDMA channel characteristics information from at least one other

base station” The Office Action admits *Alamouti* fails to disclose selecting a set of channels based on information from at least one other base station. Office Action page 3. The Office Action attempts to cure this deficiency by introducing *Sampath*, which the Office Action alleges teaches this element of claim 22. Specifically, the Office Action points to Figures 5 and 9 of *Sampath*.

However, as shown above for claim 1, *Sampath* fails to teach selecting (or assigning) channels based on information from at least one other base station. Therefore, the proffered combination of *Alamouti* and *Sampath* fails to teach or suggest all limitations of claim 22. Accordingly, Applicant respectfully requests withdrawal of the 35 U.S.C. § 103(a) rejection of claim 22 and asserts that claim 22 is patentable for, at least, the reasons stated above.

c. Independent Claim 24

Claim 24 recites “each of a plurality of subscribers estimating channel gains and noise-plus-interference levels of a set of OFDMA traffic channels in response to a sounding signal” The Office Action cites *Alamouti* column 22, line 55 to column 23, line 22 as teaching this aspect of claim 24. Office Action page 3. However, *Alamouti* discloses each receiver unit measuring each channel while in idle mode without a sounding signal from the base station. *Alamouti*, col. 24, lines 24–26. While *Alamouti* teaches a base station requesting “the next best set of meas_rpts measurements,” this request prompts RU to send a list of previously taken measurements; the request does not ask the RU to take measurements. *Alamouti*, col. 24, lines 24–42. As a result, *Alamouti* fails to teach or suggest a plurality of subscribers estimating channel characteristics in response to a sounding signal, as required by claim 24.

Claim 24 also recites “receiving, by one of said subscribers, an allocation of one or more OFDMA traffic channels allocated, in response to the measured ... channel information from a plurality of base stations including a second base station other than the first base station” The Office Action admits *Alamouti* fails to disclose selecting a set of channels based on information from at least one other base station. Office Action page 3. The Office Action attempts to cure this deficiency by introducing *Sampath*, which the Office Action

alleges teaches this element of claim 24. Specifically, the Office Action points to Figures 5 and 9 of *Sampath*.

However, as shown above for claim 1, *Sampath* fails to teach selecting (or allocating) channels based on information from at least one other base station. Therefore, the proffered combination of *Alamouti* and *Sampath* fails to teach or suggest all limitations of claim 24. Accordingly, Applicant respectfully requests withdrawal of the 35 U.S.C. § 103(a) rejection of claim 24 and asserts that claim 24 is patentable for, at least, the reasons stated above.

d. Independent Claim 27

Claim 27 recites “a radio frequency transmitter to transmit information on OFDMA traffic channels jointly allocated to a plurality of subscribers through a collaborative OFDMA channel assignment among multiple base stations.” The Office Action cites column 22, line 55 to column 23, line 22 of *Alamouti* as teaching this limitation. Office Action page 3. However, *Alamouti* discloses a single base station selecting a channel for an individual subscriber based on the individual measurements collected by that individual subscriber. *Alamouti*, col. 24, lines 24-46. As a result, *Alamouti* fails to teach or suggest a joint allocation through a collaborative channel assignment among multiple base stations.

Furthermore, the Office Action admits *Alamouti* fails to teach multiple base stations, and attempts to introduce *Sampath* column 13, lines 4-35, which the Office Action alleges cures this deficiency. However, *Sampath* does not teach collaborative channel assignment among multiple base stations. As shown above for claim 1, *Sampath* teaches adapting to the conditions of a channel, rather than performing any channel assignments.

Therefore, the proffered combination of *Alamouti* and *Sampath* fails to teach or suggest all limitations of claim 27. Accordingly, Applicant respectfully requests withdrawal of the 35 U.S.C. § 103(a) rejection of claim 27 and asserts that claim 27 is patentable for, at least, the reasons stated above.

B. The Combination of *Alamouti*, *Larsson* and *Sampath* Fails To Teach or Suggest All Limitations of Independent Claims 7 and 32

a. Independent Claim 7

Independent claim 7 recites “receiving, at each base station, channel condition information for a plurality of OFDMA traffic channels from at least one of said subscribers and at least one other base station” The proffered combination of *Alamouti*, *Larsson* and *Sampath* fails to teach a base station receiving channel information from a subscriber and another base station. *Alamouti* discloses receiving channel information from a subscriber but fails to teach receiving channel information from another base station. *Alamouti*, col. 24, lines 24-46. *Sampath* teaches a subscriber receiving information from two base stations and a base station receiving a determination regarding the deactivation of antenna’s from a subscriber, but fails to teach a base station receiving channel information from another base station or from a subscriber. *Sampath*, col. 13, lines 13-35. *Larsson* teaches a base station receiving channel information from a single subscriber but fails to teach or suggest receiving information from other base stations. *Larsson*, Figure 8. As a result, the proffered combination fails to teach or suggest a base station receiving channel information from both a subscriber and another base station.

Claim 7 also recites “collaborat[ing] with said at least one other of said base stations to provide joint OFDMA channel allocation to multiple ones of said plurality of subscribers.” The Office Action admits *Alamouti* in view of *Larsson* fails to teach this limitation, and attempts to introduce *Sampath*, column 13, lines 4-35 to cure this deficiency. Office Action page 5-6. Specifically, the Office Action points to Figures 5 and 9 of *Sampath*.

However, as shown above for claim 1, *Sampath* fails to teach selecting (or allocating) channels based on information from at least one other base station. Therefore, the proffered combination of *Alamouti* and *Sampath* fails to teach or suggest all limitations of claim 7. Accordingly, Applicant respectfully requests withdrawal of the 35 U.S.C. § 103(a) rejection of claim 7 and asserts that claim 7 is patentable for, at least, the reasons stated above.

b. Independent Claim 32

Independent claim 32 recites “interference information feedback from subscribers and from at least two base stations to provide joint OFDM channel allocation to multiple subscribers” However, as explained above, *Alamouti* in view of *Larsson* in further view of *Sampath* fails to teach a base station receiving interference information from subscribers and at least two base stations. *Alamouti* discloses receiving channel information from a subscriber, but fails to teach receiving channel information from another base station. *Alamouti*, col. 24, lines 24-46. *Sampath* teaches a subscriber receiving information from two base stations and a base station receiving a determination regarding the deactivation of antenna’s from a subscriber, but fails to teach a base station receiving channel information from another base station *or* from a subscriber. *Sampath*, col. 13, lines 13-35. *Larsson* teaches a base station receiving channel information from a single subscriber yet fails to disclose receiving information from other base stations. *Larsson*, Figure 8. As a result, the proffered combination fails to teach a base station receiving channel information from both a subscriber and another base station, as required by claim 32.

Claim 32 also recites “determin[ing] OFDMA channel assignment based on broadband spatial channel estimates and measured OFDMA channel and noise-plus-interference information feedback from subscribers and from at least two base stations.” The Office Action admits *Alamouti* in view of *Larsson* fails to teach this limitation, and attempts to introduce *Sampath*, column 13, lines 4-35 to cure this deficiency. Office Action page 5-6. Specifically, the Office Action points to Figures 5 and 9 of *Sampath*.

However, as shown above for claim 1, *Sampath* fails to teach selecting (or allocating) channels based on information from at least one other base station. Therefore, the proffered combination of *Alamouti* and *Sampath* fails to teach or suggest all limitations of claim 32. Accordingly, Applicant respectfully requests withdrawal of the 35 U.S.C. § 103(a) rejection of claim 7 and asserts that claim 7 is patentable for, at least, the reasons stated above.

C. The Combination of *Alamouti* and *Sampath* Fails To Teach or Suggest All Limitations of Dependent Claims 3-5, 23, 25-26 and 28-31

Dependent claims 3-5, 23, 25-26 and 28-31 depend from a respective one of claims 1, 22, 24 and 27 and inherit all the limitations of their respective base claims. As shown above, the proffered combination of *Sampath* and *Alamouti* fails to teach or suggest all limitations of claims 1, 22, 24 and 27. Applicant respectfully asserts that dependent claims 3-5, 23, 25-26 and 28-31 are patentable for, at least, the reasons set forth above with respect to independent claims 1, 22, 24 and 27. Accordingly, Applicant requests withdrawal of the 35 U.S.C. § 103(a) rejections of claims 3-5, 23, 25-26, and 28-31.

D. The Combination of *Alamouti*, *Larsson* and *Sampath* Fails To Teach or Suggest All Limitations of Dependent Claims 2, 8-21, 33 and 35-36

Dependent claim 2 depends from independent claim 1. As shown above, the combination of *Sampath* and *Alamouti* fails to teach or suggest all limitations of claim 1. *Larsson* is not alleged to meet any limitations of claim 1. Applicant respectfully asserts that dependent claim 2 is patentable for, at least, the reasons set forth above with respect to independent claim 1. Accordingly, Applicant requests withdrawal of the 35 U.S.C. § 103(a) rejections of claim 2.

Dependent claims 8-21, 33 and 35-36 depend from a respective one of claims 7 and 32 and inherit all the limitations of their respective base claims. As shown above, the proffered combination of *Sampath*, *Larsson* and *Alamouti* fails to teach or suggest all limitations of claims 7 and 32. Applicant respectfully asserts that dependent claims 8-21, 33 and 35-36 are patentable for, at least, the reasons set forth above with respect to independent claims 7 and 32. Accordingly, Applicant requests withdrawal of the 35 U.S.C. § 103(a) rejections of claims 8-21, 33 and 35-36.

III. Conclusion

In view of the above, Applicant believes the pending application is in condition for immediate allowance. Applicant therefore requests that the Examiner pass all pending claims to issue.

Applicant believes no fee is due with this response. However, if a fee is due, please charge our Deposit Account No. 06-2380, under Order No. 68144/P013US/10502108 from which the undersigned is authorized to draw.

Date: _____

Respectfully submitted,

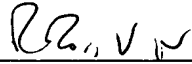
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